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ABSTRACT

A random sample of educators (a total of 2,238 responses from teachers of the gifted, classroom teachers, and gifted education program coordinators) were surveyed regarding their views on major research needs in gifted education. The study evaluated these views as well as differences between groups of educators, and differences among respondents from different school settings. Several categories of needed research were identified. The first group of studies would examine programs for the gifted including program effectiveness, staff development, program effects at different ages, and curriculum types. A second group of studies would examine students in programs for the gifted including factors leading to underachievement, student motivation, social integration, and unique needs of students from economically disadvantaged areas or from minority groups. The third group of studies would focus on research methods and analysis including studies of power analysis and effect size calculations as ways to differentiate between statistical and practical differences. The survey respondents identified the most important research topics as curriculum development, underachievement, personal and social development, identification, and student assessment. There were no significant differences among types of educators with respect to needed research. There were, however, significant and practical differences among school settings with respect to the importance of special populations for research in gifted education. (13 references) (DB)

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RESEARCH NEEDS IN GIFTED EDUCATION:

A STUDY OF PRACTITIONERS' PERCEPTIONS

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Abstract

The purpose of this paper is to describe the Research Needs Assessment Process that was conducted by The National Research Center on the Gifted and Talented (NRC/GT). This process was conducted to determine practitioners' perceived research with regard to gifted education. A number of groups participated in the Research Needs Assessment Process.

This paper reports the responses that were returned from the random sample of teachers of the gifted. Specifically, this group believed that more research was needed in the area of Curriculum Development, Personal and Social Development, Identification, and Student Assessment.

Introduction

Research in the field of gifted education, and in educational research in general, has often been initiated by the interests of individual researchers and graduate students rather than practitioners in the field (Renzulli et al., 1989). According to Weaver and Shonkoff (1978), however, little thought has been given to whether educational research has addressed the immediate concerns or needs of practitioners. And yet, it is those teachers who are the most in need of assistance from the educational research community.

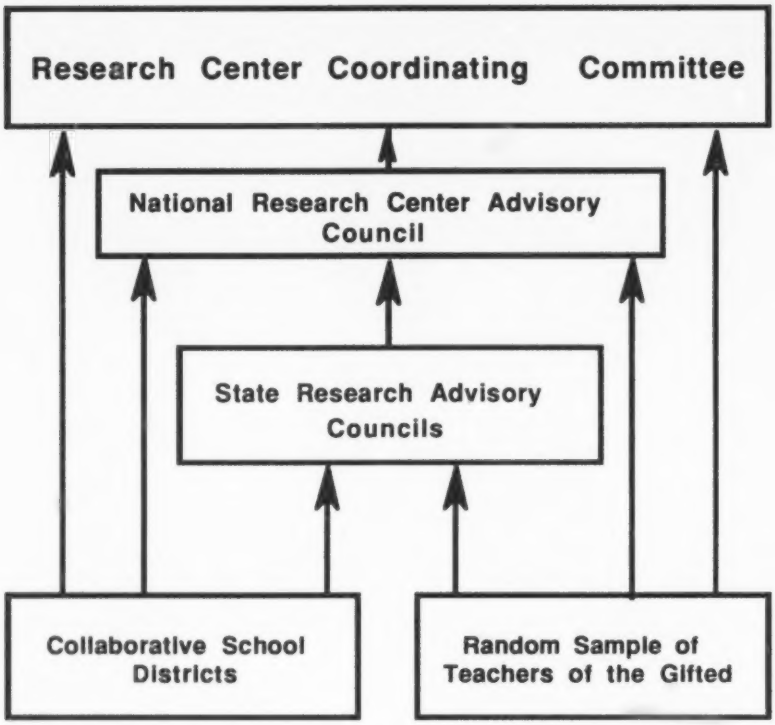
If educational practice is to be changed or modified by research, practitioners must become partners in making decisions about important areas of research needs, as well as in planning and conducting research directed toward the improvement of school and classroom practices. The Office of Educational Research and Improvement has made this partnership a priority (Cross, 1990). However, a history of poor relations between schools and universities has created a rift that has made collaborative research difficult. Researchers build theories and seemingly lack empathy for the problems encountered by teachers. Teachers tend to discount educational research because of the researcher's unwillingness to provide practical solutions to problems (Renzulli, 1991). The rationale for collaboration is plainly evident. Teachers possess important knowledge about the classroom milieu that researchers often do not understand, and researchers are better able to provide a systematic approach that practitioners are usually not aware of through their own experiences (Floden & Klinzing, 1990).

Background of the Study

The NRC/GT was conceived as a vehicle to bring together all segments of the gifted education community in order to develop a consensus regarding research needs, and to work collaboratively to plan and conduct research deemed to have the greatest significance to the field. The absolute priority of the enabling legislation was also to examine groups that have traditionally been underrepresented in programs for the gifted.

The first step in setting an agenda for the NRC/GT was to create a process that merged the research priorities of practitioners with the resources and capabilities of the Center. The needs assessment process developed a prioritized list of research needs that was used by The National Research Center on the Gifted and Talented in planning and organizing research in the second year of operation. The needs assessment process was a systematic attempt to gather data through a vast network of sources that was composed of several groups and stages. As indicated in Figure 1, the data were gathered from a random sample of teachers of the gifted, Collaborative School Districts (CSD), State Research Advisory Councils (SRAC), and others. Preliminary data were sent to the SRACs to develop a state agenda for research. The results of the final data were provided to the National Research Center Advisory Council (NRCAC) for the development of a national agenda. The results were, in turn, provided to the Research Center Coordinating Committee (RCCC) for a final determination of research priorities and the assignment to the teams responsible for carrying out the research. Figure 1 graphically displays the nature of the process.

Figure 1. Research Needs Assessment Process


Research Center Coordinating Committee
National Research Center Advisory Council
State Research Advisory Councils
Collaborative School Districts
Random Sample of Teachers of the Gifted

There were many "key players" in the process, and each will be briefly described. Among this group were practitioners involved in the education of the gifted. Practitioners are defined as those individuals who are most directly involved in the education of the gifted. This includes teachers of the gifted, classroom teachers, school support personnel, school principals, and other administrators. These practitioners are represented in the random sample of teachers of the gifted, the Collaborative School Districts, and within the State Research Advisory Councils. The State Research Advisory Councils (SRAC) were established in each state and territory, headed in most cases by the state director for gifted education. Membership

of these SRACs was organized in a way that reflects all interest groups in the states and territories. The National Research Center Advisory Council (NRCAC) is comprised of individuals who were selected to represent various constituencies. These groups included minority groups, specialized interest groups (Vocational Education, the Arts, etc.), geographic areas, and school settings (urban, suburban, and rural). The Collaborative School Districts (CSD) are districts around the country (currently 268 districts representing approximately 4,000 schools) that have agreed to be involved in research projects with The National Research Center on the Gifted and Talented.

Another key player in the overall process was the Content Area Consultant Bank. The Content Area Consultant Bank was composed of researchers in gifted education who have been invited to be a part of a group that would potentially provide expert assistance in future research projects. The final group was stakeholders or groups that included individuals and organizations that have a "stake" in the education of bright students (principal centers, journal editors, parent organizations, business leaders). These groups and individuals provided input into the research needs assessment and will, in the future, provide vehicles for the dissemination of research findings.

Methods and Procedures

Instrumenttation

The instrument used in the collection of survey data was the Research Needs Assessment Survey developed by Joseph S. Renzulli, Brian D. Reid, and Scott W.

Brown. This instrument was developed based on a review of the literature and went through content validity checks and several pilot studies. The survey consists of 91 responses in two main sections (Special Populations and Program Components) and a third section of demographic information. The response format is a 7-point Likert scale, with a response of 1 indicating no importance of the item and a response of seven indicating the highest importance in terms of needed research in gifted education (Reid, 1991).

Random Sample of Teachers of the Gifted

Although the total sample in the Research Needs Assessment process included several groups (see Table 1), this paper is directed at the largest of the groups, the

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Insert Table 1 Here

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random sample of teachers of the gifted. This sample was obtained through the use of an educational marketing company, (Market Data Retrieval; Shelton, CT). This company compiles lists of school district personnel through the use of surveys and telephone calls. Through information obtained from this company the total number of teachers of the gifted nationally was estimated at 21,335. The sample size necessary for the total national population would have been 379 to achieve a 95% level of confidence according to Krejcie and Morgan (1970). A decision was made, however,

to stratify this group by state and territory in order to distribute surveys evenly throughout the country.

In order to determine the sample size necessary for each state the number of teachers of the gifted in each state was inserted into a sampling formula provided by Krejcie and Morgan (1970, p. 607). After the number of teachers of the gifted was determined for each state, Market Data Retrieval selected the final random sample from their list according to the above specifications. The total sample was determined to be 8,336. The mailing labels for this sample were ordered and examined. One hundred fifty-one duplicate names were removed from the list. Duplicate names may have been on the list because some teachers of the gifted travel from school to school. This reduced the total sample to 8,187.

Research Questions

The purpose of this investigation was to determine what the most important topics were regarding research needs in gifted education among the random sample. Additional questions were designed to decide if there were practical differences among groups of educators or respondents from different school settings. The specific research questions were:

1. What are the perceptions of teachers of the gifted, classroom teachers, and gifted education program coordinators with regard to major research needs in gifted education?

2. Are there significant differences among groups of educators with respect to research needs of special populations and program components?
3. Are there significant differences among respondents from different school settings (urban, suburban, rural) with respect to research needs of special populations and program components?

Demographics

The 2,238 individuals that responded to this survey from the random sample represented all of the states, as well as Washington, D.C., and the territories of American Samoa, Guam and the Virgin Islands. This translates to a 27% response rate based on 8,187 surveys mailed. Of the surveys returned, 1,532 respondents (68%) identified themselves as teachers of the gifted, 115 (5%) identified themselves as classroom teachers, and 294 (13%) identified themselves as coordinators of gifted programs. The remaining 297 respondents (13%) included 6 university faculty (0.2%), 12 building principals (0.5%), 13 central office administrators (0.6%), 229 selecting other (10%), and 27 (1.2%) not responding to this item. The sample was composed of urban (14.5%), suburban (41.8%), and rural (43.7%) schools, and 11.9% male and 88.1% female. Table 2 shows the education level of the total sample.

Insert Table 2 Here

The ethnic composition of the sample is Hispanic-American (0.8%), African-American (1.7 %), Native-American (0.7 %), Caucasian-American (92.9 %), Asian-American/Pacific Islander (1.7 %), other (0.0.6 %), and missing data (1.6%). The respondents come from public schools (82.6%), and private schools (1.1 %), with 16.3% not responding to this item.

The average number of years in education was 18 years with 20.4% missing data. Table 3 indicates the respondents' level of training in gifted education.

Insert Table 3 Here

Results

Research Question 1

The first research question was directed at determining the most important topics for research from the respondents in the random sample. This was examined more closely for different professional roles (teacher of the gifted, classroom teachers, etc.).

Teachers of the Gifted. The most important topic for research among the teachers of the gifted was Curriculum Development, followed by Underachievement, Personal and Social Development, and Identification. Table 4 indicates the importance of the items as determined by the ranked means.

Insert Table 4 Here

Classroom Teachers. The 115 classroom teachers that were part of the random sample gave Curriculum Development the highest mean (5.959, STD=1.308) for research as indicated by the ranked means (see Table 5). This was followed by

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Insert Table 5 Here

Underachievement, Student Assessment, Economically Disadvantaged, Personal and Social Development, and Identification.

Program Coordinators. The 294 program coordinators ranked Curriculum Development (6.164, STD=1.119) as the most important item followed by Underachievement, Gifted Females, Personal and Social Development, Instructional Grouping, and Student Assessment (see Table 6).

Insert Table 6 Here

Research Question 2

This research question was designed to determine if there were differences in the perceived research needs among the various groups of educators. A first step in looking for differences among the groups with respect to Special Population items was to perform a repeated measures ANOVA on these items by educators within this sampling group. The dependent variable was the responses to the items for the 13 items that are included in Special Populations. The independent variable was the different levels of Educator. These levels included teachers of the gifted, classroom teachers, and coordinators of gifted programs.

There was not a main effect for educator. There was a main effect for item, as well as an interaction between source and item as indicated in Table 7. The purpose for this analysis was to determine if there was a difference among the groups of

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Insert Table 7 Here

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educators on the Special Population items. According to the repeated measures ANOVA, there were no significant differences among the levels of educator for the random sample. Therefore, any differences among the educators responding are insignificant.

The second part of this research question analyzed the repeated measures ANOVA performed on the items from Program Components of the survey for the random sample. The three levels included for this analysis were teachers of the gifted, classroom teachers, and coordinators of programs for the gifted. The repeated measures procedure results indicated that there was not a main effect for educator for the items in Program Components in the random sample. Table 8 provides the results of the repeated measures procedure. There was a main effect for item and an

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Insert Table 8 Here

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interaction of educator and item. There does not seem to be a difference among the educator groups with respect to the Program Components.

Research Question 3

The third research question was designed to look for differences among the responses from different school settings. The repeated measures ANOVA indicated that there was a main effect for school setting for the items in Special Populations in the random sample. There was a main effect for item and an interaction of school setting and item. The results indicated a statistically significant a difference among the school setting groups in the random sample with respect to the Special Populations. The results of the repeated measures analysis can be found in Table 9.

Insert Table 9 Here

The follow-up procedures consisted of an analysis of variance, Scheffé post hoc, and t tests with Bonferonni Inequality adjustments in the alpha level to determine the location of the differences, and finally, a calculation of effect sizes to determine the size of the differences. As indicated in Table 10, there were substantial differences among these groups on several items. Cohen (1988) indicated that effect sizes of .8 were to be considered large. An effect size of this magnitude was found between urban and rural responses on African-Americans. Moderate effect sizes of .50 or

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Insert Table 10 Here

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above, were located between urban and suburban responses on Economically Disadvantaged, and between urban and rural responses on Hispanic-Americans.

The final part of this research question determined if there were differences among responses from different school settings with regard to Program Components. The repeated measures ANOVA indicated that there was not a main effect for school setting for the items in Program Components as shown in Table 11. There was a main effect for item and an interaction of school setting and item. There does not seem to be a difference among the school setting groups in the random sample with respect to the Special Populations.

Insert Table 11 Here

Implications for Research

Based on the results of the survey, several categories of research would seem to be necessary. The first group of studies would be aimed at examining programs for the gifted. The second set of studies would examine the needs of students in terms of curriculum and individual interventions. The third set of research would deal with the research methods and analysis.

Within the first set of studies, the most important need seems to be examining programs for the gifted. Determining the effectiveness of programs for the gifted and

the dissemination of this information to decision makers is important. One possible research study would be to do a meta-analysis of studies that addressed the effectiveness of specific models. Although not listed on the survey, staff development emerged from the National Research Center Advisory Council Meetings as an important consideration (Reid, 1991). What kinds of professional development strategies are the most effective in disseminating knowledge, understanding and skills about the gifted to all staff members in a school? Are some methods more effective due to the special nature of education of the gifted? An important study that needs to be conducted is a longitudinal study of the children in programs for the gifted. Do these programs make any difference? Which kind of program is the most effective in developing adult giftedness?

Other research could examine different kinds of programs for different grades. Folk wisdom would indicate that early intervention affects the most change. Even though the survey did not rate Grade Level as important, this is an important issue. Another important issue is whether a program must identify children as gifted in order to provide services? What are effective methods of providing high quality services to students that do not become tangled with labeling, elitism, and other problems often associated with programs for the gifted? Are these programs more, or less, effective than programs with strict identification schemes? What kind of alternative identification systems or methods of assessment locate potential in students from economically disadvantaged backgrounds, different cultures, or other underrepresented groups? What kind of administrative structures are the most effective in producing achievement gains? What kind of programs are the most

effective at producing positive affective outcomes? What kind of programs are the most effective in addressing personal and social issues?

Another study or, more likely, series of studies would be those that examine different kinds of curriculum for gifted students. It is probably not necessary to develop new curriculum. Perhaps, a first step would be to examine the most promising curriculum in existence, perhaps along the same lines as the University of Virginia study that is examining identification and evaluation instruments and designs (Renzulli et al., 1991). What kind of program would be the most effective in teaching thinking skills to gifted students? Would the same program be effective for all students? What kind of curriculum is the most effective in identifying and nurturing artistic talent in students?

A second theme of studies would examine students in programs for the gifted. What are the factors that lead to underachievement? What can gifted programs do to reverse these patterns? Do gifted students have different levels or kinds of motivation? Amabile (1983, 1989) has indicated that extrinsic motivators may dampen creativity. How can programs for the gifted encourage intrinsic motivation in high ability youth? What kinds of organizational or management techniques are the most successful in the development of intrinsic motivation in gifted students? What are the problems associated with gifted students relating to social and personal relations? What interventions are the most successful in integrating gifted students socially with other students? Are there any affective differences between students in programs for the gifted as comparfed to students from schools without special programs? An important question to be answered is whether bright students are at-risk for dropping

out of school at a higher rate than lower ability students in various school settings?

Another question with regard to research on the gifted might be to consider the variables examined in studies on the gifted. Perhaps more emphasis should be placed on affective variables. Clearly, the importance given to Personal and Social Development would justify research on these kinds of variables. Do bright students have different relationships with peers than other students with educational differences? Do these relationships develop differently? What are the effects within the family of a student identified for a gifted program? Other issues of personal development and family relationships should also be examined.

Another set of studies related to both program effectiveness and student characteristics would involve the identification of the unique needs of students from economically disadvantaged areas or areas with higher concentrations of minorities or students from culturally diverse environments. The highest proportion of gifted programs, according to returns from the Random Sample, are in suburban areas. What kinds of identification systems, student assessment, personal and social interventions, programming, or curriculum are more appropriate or effective in terms of developing the potential for students in less advantaged urban or rural settings? There was a great need expressed by respondents from urban areas to conduct research with students from Special Populations.

In addition to the previously mentioned categories of research needed for gifted programs and students, a final set of actions are proposed. This study supports Cohen's (1988, 1990) perspective that researchers must go beyond rejection of the null hypothesis that no difference exists in statistical analysis. Hypothesis testing does

not always provide sufficient information about groups. Using power analysis and effect sizes in studies provides more information about the strength of relationships than probability levels. Another interesting research study would be to apply power analysis and effect size calculations to studies published in gifted education journals over the course of a year. This research would determine whether the studies had sufficient levels of power in the analyes to differentiate between statistical and practical differences. This would provide valuable information about the research that is being done in the field and whether the conclusions are warranted based on effect sizes.

A second follow-up study should examine the subcategories of the needs assessment data for more specific details of research needs. This analysis might provide a more complete picture of research needs. For example, one of the surprising results of the Needs Assessment Survey is the relative unimportance of research on preschool and primary programs under Grade Level.

A final study should make a detailed analysis of the demographic information that was included in the Research Needs Assessment Survey. This follow-up would provide a more complete picture of the composition of gifted programs in this country.

Conclusions

The results reported in this paper suggest that there is a consensus among educators with respect to the most important research in gifted education. The first, and clearly, most important research needed according to the random sample of

teachers of the gifted was Curriculum Development. This was followed by Underachievement, Personal and Social Development, Identification, and Student Assessment.

There were not statistically significant differences among the various kinds of educators with respect to needed research in gifted education. However, there were significant and practical differences among school settings with respect to the importance of different Special Populations for research in gifted education. This may have been caused by the directions of the survey. These directions were for the educator to base their ratings of the items on their local school. These differences may only reflect the differing populations within urban, suburban and rural settings.

Although there has been a great deal of research in gifted education since Terman, more is needed. Research in gifted education must be directed in three directions. First, research in gifted education must provide information on the effectiveness of programs for the gifted, curriculum used in these programs, and specific interventions used with gifted students. The bulk of the research should be directed in identifying the most effective practices in gifted education. Also important are issues related to minorities, economically disadvantaged and other groups that have been traditionally underrepresented in programs for the gifted. These populations must be examined to determine methods of providing appropriate service to these groups.

Secondly, research must be friendly to practitioners and decision-makers. If research is to have an impact on practice, it must be readily available and understandable to those people who plan, organize, and implement programs for the

gifted. Decision-makers cannot sort through the maze of journals that are directed at researchers and statisticians. Although research should be published through these avenues to allow other researchers to review the study to determine if the conclusions are warranted from a methodological perspective, an additional vehicle must be found to disseminate the results and conclusions in a less technical form to assist practitioners with decision making.

Finally, research in gifted education must become more sophisticated. The use of simple statistical tests such as correlation and *t* tests should give way to multivariate and power analysis to examine issues and interpret the results. The use of more sophisticated statistical techniques would increase the level of confidence in the conclusions derived from a study. Pyryt and Heck (1991) have indicated that, among other reasons, the research on the gifted calls for multivariate analysis that reflects the multidimensional nature of gifted students. One implication of this is that training programs in gifted education must encourage preparation in advanced techniques of analysis, both qualitative and quantitative, for their students. Researchers in gifted education should be as well grounded in advanced methodology as they are in gifted education.

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Table 1

Research Needs Assessment Sample

Sampling Group	n
Random Sample of Teachers of the Gifted	8,187
Collaborative School Districts	4,237
State Research Advisory Councils	1,325
Total Sample	13,749

Table 2

Educational Level of Total Sample (n=2,238)

Education	Percentage
BA/BS	21.7%
MA/MS	55.8%
Specialist	16.2%
Ph.D./Ed.D.	3.2%
Other	2.2%
Missing Data	0.8%

Table 3

Training in Gifted Education: Total Sample (n=2,238)

Level of Training	Percentage
None	2.9 %
Workshops	10.6 %
National or State Conference	6.0 %
Courses in Gifted	47.9 %
Degree	22.9 %
Other	6.3 %
Missing Data	3.3 %

Table 4

Teachers of the Gifted: Random Sample (n=1532)

Item	Mean	STD
Curriculum Development	6.10	1.24
Underachievement	5.99	1.27
Personal & Social Development	5.59	1.44
Identification	5.59	1.55
Student Assessment	5.53	1.39
Gifted Females	5.49	1.60
Economically Disadvantaged	5.26	1.74
Psychological Aspects	5.19	1.51
Instructional Grouping	5.13	1.57
Dropouts & At-Risk	5.02	1.89
Patterns of Program Organization	4.99	1.77
Caucasian-Americans	4.89	1.99
Learning Disabled	4.85	1.70
Program Evaluation	4.74	1.62
Behavior Disordered	4.70	1.73
Grade Level	4.48	1.69
Policy Development	4.44	1.74
African-Americans	3.88	2.16
English as a Second Language	3.66	2.09
Program Settings	3.61	1.77
Physically Handicapped	3.52	1.81
Native-Americans	3.45	2.12
Hispanic-Americans	3.40	2.07
Asians-Pacific Islanders	3.27	2.05

Table 5

Classroom Teachers: Random Sample (n=115)

Item	Mean	STD
Curriculum Development	5.96	1.31
Underachievement	5.56	1.56
Student Assessment	5.45	1.41
Economically Disadvantaged	5.45	1.65
Personal & Social Development	5.38	1.70
Identification	5.36	1.58
Gifted Females	5.24	1.86
Psychological Aspects	5.20	1.57
Instructional Grouping	5.21	1.56
Dropouts & At-Risk	5.13	1.82
Caucasian-Americans	4.96	1.78
Patterns of Program Organization	4.91	1.85
Behavior Disordered	4.68	1.68
Policy Development	4.68	1.77
Program Evaluation	4.63	1.70
Learning Disabled	4.62	1.81
Grade Level	4.46	1.73
Hispanic-Americans	3.87	2.09
English as a Second Language	3.87	2.07
Program Settings	3.83	1.79
African-Americans	3.55	2.08
Physically Handicapped	3.53	1.85
Native-Americans	3.45	2.11
Asians-Pacific Islanders	3.20	1.90

Table 6

Program Coordinators: Random Sample (n=294)

Item	Mean	STD
Curriculum Development	6.16	1.12
Underachievement	6.05	1.20
Gifted Females	5.63	1.46
Personal & Social Development	5.52	1.36
Instructional Grouping	5.46	1.56
Student Assessment	5.45	1.45
Economically Disadvantaged	5.30	1.68
Identification	5.29	1.66
Dropouts & At-Risk	5.28	1.75
Psychological Aspects	5.13	1.46
Caucasian-Americans	5.12	1.87
Patterns of Program Organization	5.11	1.71
Learning Disabled	5.04	1.59
Program Evaluation	4.95	1.57
Behavior Disordered	4.84	1.60
Grade Level	4.52	1.66
Policy Development	4.47	1.66
Physically Handicapped	3.58	1.84
Program Settings	3.51	1.68
African-Americans	3.34	2.20
English as a Second Language	3.29	2.02
Asians-Pacific Islanders	3.26	2.01
Hispanic-Americans	3.24	2.02
Native-Americans	3.04	2.19

Table 7

RMANOVA: Educator by Special Population: Random Sample

Source of Variation	SS	df	MS	F	
Educator	0.13	2	.07	0.01	
Item	7756.10	8.47	646.34	255.49	***
Educator by Item	257.94	16.93	10.75	4.25	***

*** p.<.001.

Table 8

RMANOVA: Educator by Program Components for the Random Sample

Source of Variation	SS	DF	MS	F	
Educator	1.97	2	.99	.19	
Item	2995.96	9.26	299.60	169.71	***
Educator by Item	96.30	18.53	4.82	2.73	***

*** p.<.001.

Table 9

RMANOVA: School Setting by Special Populations: Random Sample

Source of Variation	SS	df	MS	F	
School Setting	559.81	2.00	279.89	22.72	***
Item	16556.20	8.58	1379.68	561.62	***
Setting by Item	2019.05	17.16	84.13	34.24	***

*** $p < .001$.

Table 10

Effect Sizes for Special Population Items Between School Setting Groups

	Groups		
Item	U/S	U/R	S/R
Native-Americans	.35 *	.33 *	.02
African-Americans	.43 *	.82 *	.38 *
Hispanic-Americans	.43 *	.62 *	.24 *
Caucasian-Americans	.21	.36 *	.14
Asians & Pacific Islanders	.07	.49 *	.40 *
Economically Disadvantaged	.50 *	.10	.43 *
Behavior Disordered	.01	.005	.02
Gifted Females	.16	.05	.10
English as a Second Language	.19	.51 *	.32 *
Underachievement	.03	.05	.08
Physically Handicapped	.09	.16	.06
Dropouts & At-Risk	.18	.06	.13
Learning Disabled	.12	.04	.07
Average Effect Size	.21	.27	.21

Note: Cohen (1988) has determined that effect sizes of .20 are small, .50 are medium, and .80 are large.

Table 11

RMANOVA: School Settings by Program Components in the Random Sample

Source of Variation	SS	DF	MS	F	
School Setting	16.34	2.00	8.17	1.57	
Item	7901.64	9.28	790.16	449.80	***
Setting by Item	226.25	18.57	11.31	6.44	***

*** p.<.001.